

Support Materials for Core Content for Assessment Version 4.0

Practical Living/Vocational Studies

February 2006
Kentucky Department of Education

Introduction to Depth of Knowledge (DOK) Levels for Practical Living/Vocational Studies
Based on Norman Webb's Model
(Karin Hess, Center for Assessment/NCIEA, 2005)

According to Norman L. Webb ("Depth of Knowledge Levels for Four Content Areas," March 28, 2002), interpreting and assigning depth of knowledge levels to both objectives within standards and assessment items is an essential requirement of alignment analysis.

Four Depth of Knowledge (DOK) levels were developed by Norman Webb as an alignment method to examine the consistency between the cognitive demands of standards and the cognitive demands of assessments.

Descriptors of DOK Levels for Practical Living/Vocational Studies (based on Webb, *Technical Issues in Large-Scale Assessment*, report published by CCSSO, December 2002)

Recall and Reproduction - Depth of Knowledge (DOK) Level 1

Recall and Reproduction involves the recall of information (definition, term, fact, concept) and/or the use of a simple interpretive process, based on observation and/or past experience with health/physical education, consumerism, and vocational studies. Recall and Reproduction only requires students to demonstrate a rote response, use a well-known formula, follow a set procedure (like a recipe), or perform a clearly defined series of steps. A "simple" procedure is well defined and typically involves only one step to complete. Application of knowledge to given problems at this level requires a basic understanding of information and/or interpretation of skills. Simple procedures such as "identify," "recognize," "recall," or "define," generally represent the cognitive work at the recall and reproduce level. Verbs such as "describe" and "explain" could be classified at different DOK levels, depending on the complexity of what is to be described and/or explained.

A student answering a Level 1 item either knows the answer or does not: that is, the answer does not need to be "figured out" or "solved." In other words, if the knowledge necessary to answer an item automatically provides the answer to it, then the item is at Level 1. The knowledge necessary to answer the item does not automatically provide the answer, and then the item is at Level 2 or higher.

Some examples that represent but do not constitute all of Level 1 performance are:

- Identify effective social interaction skills.

- List effective self-management and coping strategies.
- Explain risks associated with unhealthy habits.
- Explain the functions of the reproductive system.
- Suggest basic rules for participating in simple games and activities.

Skills and Concepts/Basic Reasoning – Depth of Knowledge (DOK) Level 2

Skills and Concepts include the engagement of some mental processing beyond simply recalling or reproducing a response. The content knowledge or process involved is more complex than Level 1. Items require students to make some decisions about how to approach the question or problem. Students will be required to make "observations," make basic "analysis" or "interpretation" of the provided information, and draw conclusions. At this level students may be asked to "describe," "interpret," or "explain" how knowing one's interests and abilities is helpful in selecting and preparing for a career path. These actions imply more than one step.

Skill and Concept activities include making observations and collecting data; classifying, organizing, and comparing data; and organizing and displaying data in tables, graphs, and charts. Some action verbs, such as "explain," "describe," or "interpret," could be classified at various DOK levels, depending on the complexity of the action. For example, students can compare symptoms of social, mental and emotional problems or organize the decision making steps when choosing a career, is a Level 2.

Some examples that represent but do not constitute all of Level 2 performance are:

- Explain how and why personal responsibility and good work habits are important at work, home, and school
- Describe why effective social interaction skills are important.
- Describe how an individual's behavior and choices affect the body.
- Interpret how the reproductive system impacts individual's well being.
- Explain how jobs and career opportunities vary within and among communities and regions.

Strategic Thinking /Complex Reasoning– Depth of Knowledge (DOK) Level 3

Strategic Thinking requires a deep knowledge involving more demanding reasoning, planning, using evidence, and higher mental processing than the previous two levels. The cognitive demands at Level 3 are complex and abstract. The complexity does not result only from the fact that there could be multiple answers, a possibility for both Level 1 and 2, however the multi-step task requires more demanding reasoning. In most instances, requiring students to explain their thinking is at Level 3. Activities that have more than one answer and require students to justify their interpretations are at Level 3. Items include making interpretations, citing evidence, analyzing the use of elements and principles; using concepts to solve problems; analyzing similarities and differences; proposing alternate solutions or revisions; and

analyzing connections across time and place. Example items at Level 3 might involve having students apply financial practices of budgeting, and the importance this has on long-term goals. Students might be asked to critique examples of various skills and interpret how they impact life long earning potential and future career opportunities.

Some examples that represent, but do not constitute all of Level 3 performance are:

- Explain and apply skills used to seek, obtain, and change job/careers and postsecondary opportunities.
- Explain the purpose of technology tools and how they impact productivity in homes, schools and communities.
- Compare consumer actions and analyze how these actions impact the environment.
- Analyze the effect of individual behavior choices and habits relating to diet, exercise, rest, and other choices on various body systems.
- Recommend strategies and justify the effect, self-management and coping skills have on maintaining mental and emotional health.

Extended Thinking/Reasoning – Depth of Knowledge (DOK) Level 4

Extended Thinking/Reasoning requires complex reasoning, planning, developing, and investigating, most likely for an extended period of time. The extended time period is not the distinguishing factor if the required work is only repetitive and does not require applying significant conceptual understanding and higher-order thinking. Students are required to make several connections, relate ideas within the content area, or among content areas, and select or devise one approach among many alternatives to solve the problem. Many on demand assessment instruments will not include any assessment activities that could be classified at Level 4. However, standards, goals, and objectives can be stated in such a way as to expect students to perform extended thinking. Extended Thinking/Reasoning requires a synthesis of knowledge of information from a variety of sources. It can also involve applying and adapting information to real world situations. Performance assessments involving creating and making connections to real world contexts require students to design and solve a problem, but not always, Level 4 activities. These activities due to the time involved cannot be assessed on the state grade level assessments, but should be assessed locally.

Some examples that represent, but do not constitute all of Level 4 performance are:

- Assimilate data and information from a variety of sources to develop an Individual Graduation Plan and career portfolio.
- Create a comprehensive exercise plan utilizing the components of fitness and applying the FITT Principle.
- Apply and adapt information to real world situations.
- Create an advertising promotion plan that encourages a healthy lifestyle in teens.
- Present a newscast to cover recent events at school and in your community.

Table 1: Applying Webb’s Depth of Knowledge Levels for Practical Living/Vocational Studies –

**(Adapted from Karin Hess, Center for Assessment/NCIEA by the
Kentucky Department of Education, 2005)**

Webb’s DOK Levels			
Recall & Reproduction (DOK 1)	Skills & Concepts/ Basic Reasoning (DOK 2)	Strategic Thinking/ Complex Reasoning (DOK 3)	Extended Thinking/ Reasoning (DOK 4)
<ul style="list-style-type: none"> Recall or recognize a fact, term, definition, simple procedure (one-step), or property. Identify effective social interaction skills. Recognize the difference between wants and needs. Name a safety practice that can be used at school, home, or play. 	<ul style="list-style-type: none"> Specify and explain the relationship between facts, terms, ideas, or concepts. Explain ways consumer’s buying practices are influenced by peer pressure, desire for status, and advertising techniques. Compare symptoms of social, mental, and emotional problems. Describe resources that are helpful for individuals seeking treatment or counseling for negative behaviors or addictions. 	<ul style="list-style-type: none"> Interpret information from a complex graph (such as determining features of the graph or aggregating data in the graph). Analyze how technology tools impact productivity in homes, schools, and jobs. Create a business letter using block format. Apply interview techniques to obtain a job/career. Interpreting and evaluating heart rate monitor data for effective use of target heart rate 	<ul style="list-style-type: none"> Analyze and synthesize information from multiple sources Develop a business plan with all the information you gathered about entrepreneurship to develop a small school-based business. Design a wellness program for your school. Present a newscast to cover recent events at school and in your community. Create a brochure for a transactive writing piece for student’s portfolio. Create an advertising promotion plan that encourages healthy lifestyle in

Table 1: Applying Webb’s Depth of Knowledge Levels for Practical Living/Vocational Studies –

<ul style="list-style-type: none"> • Perform simple motor skills. • Recognize offensive and defensive strategies. • Define empathy. • Name a consumer action that impacts the environment. • Describe different ways to save money. 	<ul style="list-style-type: none"> • Organize specific careers and career clusters. • Interpret, information from a simple graph. • Collect and classify data in a spreadsheet. • Compare post-secondary options that would be the most appropriate for a specific career path. • Describe the flow of blood through the heart. • Organize the decision-making steps when choosing a career. 	<ul style="list-style-type: none"> • zone. • Modify a fitness/diet plan for individual needs. • Using oral/written communication skills develop and defend a position on the legal age of driving. • Demonstrate the CPR procedures. 	<ul style="list-style-type: none"> • teens. • Develop a health behavior contract. • Devise a plan to reduce environmental waste by developing a school-wide recycling program.
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Depth of Knowledge as a “Ceiling”

Core Content statements are identified with a Depth of Knowledge (DOK) levels. This level represents the highest level (ceiling) that items will be designed for the Kentucky Core Content Test.

It is important to note, however, that items will also be developed below the ceiling level. Table 2 provides four examples of practical living/vocational studies core content statements with different “ceilings,” that is, the highest DOK Level at which an item could be assessed. Table 2 also indicates the other DOK levels at which an item could be assessed.

**Table 2: Depth of Knowledge Sample Chart -
Using the Same Content Statement Across DOK levels/Grade spans
(Kentucky Department of Education, 2005)**

PL-HS-2.3.01 Components of fitness (muscular strength, muscular endurance, flexibility, body composition, cardio-respiratory endurance) and apply the FITT Principle (Frequency, Intensity, Type, Time) to create a comprehensive exercise plan. DOK 3			
Webb's DOK Levels			
Recall & Reproduction (DOK 1)	Skills and Concepts/Basic Reasoning (DOK 2)	Strategic Thinking/ Complex Reasoning (DOK 3)	Extended Thinking/Reasoning (DOK 4)
<ul style="list-style-type: none"> Identify the components of the FITT Principle 	<ul style="list-style-type: none"> Evaluate a list of exercises and identify which component of the FITT Principle it would apply to. 	<ul style="list-style-type: none"> Interpreting and evaluating heart rate monitor data for effective use of the FITT Principle. 	
PL-06-1.4.02 Basic first-aid procedures for responding to a variety of life threatening emergencies (e.g., choking, broken bones, shock, poisons, burns, allergic reactions, bleeding). DOK 1			
<ul style="list-style-type: none"> Identify a life-threatening emergency. 	<ul style="list-style-type: none"> Describe basic first-aid procedures. 	<ul style="list-style-type: none"> Explain the steps of rescue breathing. 	<ul style="list-style-type: none"> Perform the procedures for CPR (Cardiopulmonary Resuscitation) on a mannequin.

Table 2: Depth of Knowledge Sample Chart -

PL-HS-3.1.01

Ways to make responsible buying decisions in relation to wants (e.g., technology, name brand clothing, jewelry, electronics) and needs (food, clothing, housing). DOK 2

<ul style="list-style-type: none"> Define wants and needs. 	<ul style="list-style-type: none"> Sort a list of products into wants and needs. 	<ul style="list-style-type: none"> Explain ways to make responsible buying decisions in relation to wants. 	<ul style="list-style-type: none"> Create a budget for a family household accounting for their wants and needs.
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**Table 3: Depth of Knowledge Sample Chart -
Using Same Verb Across DOK Levels and Grade Spans
(Kentucky Department of Education, 2005)**

Practical Living/ Vocational Studies Core Content Statement	Ceiling	Recall & Reproduction (DOK 1)	Skills & Concepts /Basic Reasoning (DOK 2)	Strategic Thinking/Complex Reasoning (DOK 3)	Extended Thinking/ Reasoning (DOK 4)
<i>PL-04-3.2.01 Students will explain the purpose of a budget and define the basic components (income, expenses, savings).</i>	2	Describe one way consumer buying practices are influenced by their income.		Describe a short-term budgeting plan using supporting evidence from financial management practices.	
PL-04-1.2.01 Students will describe an individual behavior and choices relating to diet, exercise, and rest affect body systems (circulatory, respiratory, and digestive).	2		Describe the flow of blood through the heart.		
PL-HS-3.3.01 Students will compare consumer actions (reuse, reduce, recycle, choosing renewable energy resources using biodegradable packaging	3				Describe how urban and rural areas differ and create an effective environmental action plan inferring their differences.

Table 3: Depth of Knowledge Sample Chart -

materials, composting) and analyze how these actions impact the environment (e.g., conserving resources; reducing water, air, land pollution; reducing solid wastes; conserving energy; greenhouse effect, slowing global warming).					
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Depth of Knowledge (DOK)
2004 Released Items – Practical Living/Vocational Studies
(Kentucky Department of Education, 2005)

Elementary (Grade 5)

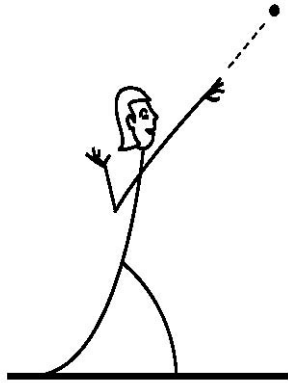
1. Puberty occurs during which stage of life?
 - a. infancy
 - b. childhood
 - c. adolescence
 - d. adulthood

2. Thomas has a part-time job working in a garden. This job would BEST help him prepare for a career in
 - a. transportation.
 - b. agriculture.
 - c. fish and wildlife.
 - d. dairy farming.

3. Susie has been taught by her parents and her teachers not to talk to strangers when she is alone.
A. Describe THREE things, in addition to not talking, that Susie might do if a stranger came up to her when she was alone. B. Explain how EACH of these actions would help to keep her safe.

4. You have been chosen to work in a small group for a class project. As a group, you must make rules to help you share ideas. A. Name THREE rules you would like to see your group follow so that everyone's ideas can be shared. B. Explain why sharing ideas are important.

Middle School (Grade 8)



5. Darlene is throwing a ball. Which goal is she most likely to accomplish if she releases the ball at 45-degree angle?
- better flexibility
 - greater speed
 - better accuracy
 - greater distance
6. Which technology has caused a reduction in the number of assembly-line workers in the United States?
- word processing
 - robotics
 - the Internet
 - paggers
7. Your friend wants to buy several music cassettes. He gets a small weekly allowance, but tends to spend this money soon after he receives it. He has asked for your advice on ways to save the money needed for the cassettes. A. Identify three different strategies your friend could use to save the money needed for the music cassettes. Be specific. B. Fully explain why each strategy is an effective way to save money. Be specific.
8. Your friend has asked you for advice in choosing sports or physical activities that provide both physical and social benefits. A. Choose three appropriate sports or activities that provide both physical and social benefits. B. Fully explain one specific physical benefit and one specific social benefit of each sport or activity that you named in part A. Make sure your explanation includes information about how each benefit is obtained.

High School (Grade 10)

9. Hallie is on the way home from work when she remembers she needs to stop and purchase a birthday gift for tonight's party. In this situation, which type of purchase will Hallie most likely make?

- a. impulse
- b. bargain
- c. comparison
- d. coupon

10. The lifelong earning potential of an individual is generally related to his or her

- a. professional contracts.
- b. supervisor's recommendation.
- c. volunteer experiences.
- d. educational training.

11. The Johnson's just moved to a new community. They need economical childcare for their youngest children. Since they know few people in their new community, they will need to rely on media and technology to give them information about the childcare available. A. List three media and/or technology sources the Johnson's could use to obtain reliable information about economical childcare. B. Choose one of the three information sources you listed in part A and explain three specific ways that the source could help the Johnson's make a decision about economical child care for their children.

12. Philip and Carol are heads of a dual-income family. They have three children who are 9, 12, and 16 years old. Carol has been offered a promotion if the family is willing to relocate. A. Describe four factors the family must consider in reaching a decision. B. Explain why each of the factors you described in part A is important.

**Depth of Knowledge (DOK) Annotations for
2004 Released Items – Practical Living/Vocational Studies
(Kentucky Department of Education, 2005)**

Elementary (Grade 5)

1. Puberty occurs during which stage of life?
 - e. infancy
 - f. childhood
 - g. adolescence
 - h. adulthood

Big Idea: Health Education **CCA 4.0: PL-04-1.1.03**
Level 1. Students need to be able to recall the stages of life.

2. Thomas has a part-time job working in a garden. This job would BEST help him prepare for a career in
 - e. transportation.
 - f. agriculture.
 - g. fish and wildlife.
 - h. dairy farming.

Big Idea: Vocational Studies **CCA 4.0: PL-04-4.1.02**
Level 2. Students must be able to differentiate between jobs in the career clusters.

3. Susie has been taught by her parents and her teachers not to talk to strangers when she is alone.
A. Describe THREE things, in addition to not talking, that Susie might do if a stranger came up to her when she was alone. B. Explain how EACH of these actions would help to keep her safe.

Big Idea: Health Education **CCA 4.0: PL-04-1.4.01**
Level 2. Students must describe safety practices, and be able to explain these practices.

4. You have been chosen to work in a small group for a class project. As a group, you must make rules to help you share ideas. A. Name THREE rules you would like to see your group follow so that everyone's ideas can be shared. B. Explain why sharing ideas are important.

Big Idea: Vocational Studies **CCA 4.0: PL-04-4.2.02**

Level 2. This is a Level 2 because students recall rules for working in a group, and must also explain why sharing these ideas are important.

Middle School (Grade 8)

5. Darlene is throwing a ball. Which goal is she most likely to accomplish if she releases the ball at 45-degree angle?
- e. better flexibility
 - f. greater speed
 - g. better accuracy
 - h. greater distance

Big Idea: Physical Education **CCA 4.0: PL-07-2.2.02**

Level 2. Students will interpret knowledge from Math and P.E. and explain how throwing a ball demonstrates accuracy.

6. Which technology has caused a reduction in the number of assembly-line workers in the United States?
- e. word processing
 - f. robotics
 - g. the Internet
 - h. pagers

Big Idea: Vocational Studies **CCA 4.0: PL-07-4.3.02**

Level 2. Students will process knowledge of technology that impacts a reduction in the number of assembly-line workers.

7. Your friend wants to buy several music cassettes. He gets a small weekly allowance, but tends to spend this money soon after he receives it. He has asked for your advice on ways to save the money needed for the cassettes. A. Identify three different strategies your friend could use to save the money needed for the music cassettes. Be specific. B. Fully explain why each strategy is an effective way to save money. Be specific.

Big Idea: Consumerism **CCA 4.0: PL-07-3.2.01**

Level 3. Students develop strategies for a saving's plan, and give evidence to justify each strategy.

8. Your friend has asked you for advice in choosing sports or physical activities that provide both physical and social benefits. A. Choose three appropriate sports or activities that provide both physical and social benefits. B. Fully explain one specific physical benefit and one specific social benefit of each sport or activity that you named in part A. Make sure your explanation includes information about how each benefit is obtained.

Big Idea: Physical Education

CCA 4.0: PL-07-2.2.01

Level 3. Students are required to develop a sequence of steps in selecting a sport, and explain the relationship between the physical and social benefits.

High School (Grade 10)

9. Hallie is on the way home from work when she remembers she needs to stop and purchase a birthday gift for tonight's party. In this situation, which type of purchase will Hallie most likely make?

- e. impulse
- f. bargain
- g. comparison
- h. coupon

Big Idea: Consumerism

CCA 4.0: PL-HS-3.1.03

Level 1. Students need to recall information regarding the type of consumer purchasing.

10. The lifelong earning potential of an individual is generally related to his or her

- e. professional contracts.
- f. supervisor's recommendation.
- g. volunteer experiences.
- h. educational training.

Big Idea: Vocational Studies

CCA 4.0: PL-HS-4.1.05

Level 2. Students will make a connection between education and lifelong earning potential.

11. The Johnson's just moved to a new community. They need economical childcare for their youngest children. Since they know few people in their new community, they will need to rely on media and technology to give them information about the childcare available. A. List three media and/or technology sources the Johnson's could use to obtain reliable

information about economical childcare. B. Choose one of the three information sources you listed in part A and explain three specific ways that the source could help the Johnson's make a decision about economical child care for their children.

Big Idea: Vocational Studies CCA 4.0: PL-HS-4.3.02

Level 3. Students perform basic recall/identification in Part A, and requires students to choose, describe, and explain how this media could help make decision about economical child care in Part B.

12. Philip and Carol are heads of a dual-income family. They have three children who are 9, 12, and 16 years old. Carol has been offered a promotion if the family is willing to relocate. A. Describe four factors the family must consider in reaching a decision. B. Explain why each of the factors you described in part A is important.

Big Idea: Consumerism CCA 4.0: PL-HS-3.1.01

Level 2. Students are required to describe and explain four factors impacting a family considering relocation.

Depth of Knowledge (DOK) Annotations
Practical Living/Vocational Studies 2004 Released Items

Elementary (Grade 5)

1. Big Idea: Health Education CCA 4.0: PL-04-1.1.03
Level 1. Students need to be able to recall the stages of life.
2. Big Idea: Vocational Studies CCA 4.0: PL-04-4.1.02
Level 2. Students must be able to differentiate between jobs in the career clusters.
3. Big Idea: Health Education CCA 4.0: PL-04-1.4.01
Level 2. Students must describe safety practices, and be able to explain these practices.
4. Big Idea: Vocational Studies CCA 4.0: PL-04-4.2.02
Level 2. This is a Level 2 because students recall rules for working in a group, and must also explain why sharing these ideas are important.

Middle School (Grade 8)

5. Big Idea: Physical Education CCA 4.0: PL-07-2.2.02
Level 2. Students will interpret knowledge from Math and P.E. and explain how throwing a ball demonstrates accuracy.
6. Big Idea: Vocational Studies CCA 4.0: PL-07-4.3.02
Level 2. Students will process knowledge of technology that impacts a reduction in the number of assembly-line workers.
7. Big Idea: Consumerism CCA 4.0: PL-07-3.2.01
Level 3. Students develop strategies for a saving's plan, and give evidence to justify each strategy.
8. Big Idea: Physical Education CCA 4.0: PL-07-2.2.01
Level 3. Students are required to develop a sequence of steps in selecting a sport, and explain the relationship between the physical and social benefits.

High School (Grade 10)

9. Big Idea: Consumerism CCA 4.0: PL-HS-3.1.03
Level 1. Students need to recall information regarding the type of consumer purchasing.
10. Big Idea: Vocational Studies CCA 4.0: PL-HS-4.1.05
Level 2. Students will make a connection between education and lifelong earning potential.
11. Big Idea: Vocational Studies CCA 4.0: PL-HS-4.3.02
Level 3. Students perform basic recall/identification in Part A, and requires students to choose, describe, and explain how this media could help make decision about economical child care in Part B.
12. Big Idea: Consumerism CCA 4.0: PL-HS-3.1.01
Level 2. Students are required to describe and explain four factors impacting a family considering relocation.